



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Sp

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,306	11/12/2003	Masafumi Akagawa	1035-481	4399
23117	7590	03/09/2005	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			HUYNH, YENNHU B	
		ART UNIT	PAPER NUMBER	
			2813	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/705,306	AKAGAWA ET AL.	
Examiner	Art Unit		
Yennhu B. Huynh	2813		

<div[](https://www.sec.gov/answers/letterhead/letterhead_01.jpg) -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

<divfunction(e){e("Status",["Status"],function(){})}();

1) Responsive to communication(s) filed on 05 December 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) 10-18 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-4 and 9 is/are rejected.

7) Claim(s) 5-8 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. ____.
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/05/03.
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____.

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to a semiconductor device, classified in class 257, subclass 522.
- II. Claims 10-18, drawn to a fabrication process of a semiconductor device, classified in class 438, subclass 612.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the oxide formed by CVD can be replaced by thermal oxidation or implantation process.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Burman Jr., Warren on 11/26/04 a provisional election was made without traverse to prosecute the invention of claim numbers 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-18 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement filed on 12/5/03 is being considered by the examiner.

Oath/Declaration

Oath/Declaration filed on 11/12/03 is accepted.

Drawings

Figures 26 -34 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,4 & 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lien et al. (US 5,989,991).

Lien et al. disclose:

-Re. claim 1: a conductive layer 311 with plurality of wires 324, 325, 326(fig.6); a bonding pad 316 formed in a region overlapping with plurality of the conductive layer (fig.6); wherein one of the plurality of wires 311 (the wiring part that located on the wiring 210 at fig. 6) is connected to the bonding pad 316; and a protective film 308 with an insulating property is formed between remaining ones of the plurality of wires and the bonding pad (fig. 2); and the protective film 308 formed on the remaining one of the plurality of wires is bridges between adjacent ones of the remaining ones of the plurality of wires at least in a region overlapping with the bonding pad (fig.6, col. 5 lines 22-34).

-Re. claim 4: Lien et al also disclose wherein an oxide insulating film 308 contains at least one of boron or phosphor as of PSG or BPSG (col.6 lines 4-14).

-Re. claim 9: Lien et al. also disclose wherein the conductive layer comprises a second wiring layer 211 that is formed on a semiconductor substrate 201 having an active region 202, 203 where a semiconductor element 205 is formed, and on a first wiring layer, via an interlayer insulating layer 207, that is electrically connected to the active region; and wherein the bonding pad is formed to overlap at the least partially with the active region (fig. 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 & 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lien et al. (US 5,989,991) in view of Harada et al. (US. 5,565,378).

Lien et al. disclose substantially all of the claimed features, but do not disclose wherein an insulating film is formed between the protective film and bonding pad as to cover the protecting film (cl.2) ; wherein the protective film formed of oxide and by CVD (cl.3).

-Re. claims 2 & 3: Harada et al. disclose an silicon oxide insulating film 79 is formed; and formed between the protective film /or coating film 81, and bonding pad 89 by CVD to cover the protecting film (fig. 1, col. 6 lines 28-30 and col.7 lines 14-23).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Harada et al.'s oxide insulating film as being claimed, into the structure of Lien et al., to prevent the damage to the protective film.

With respect to claim 3, the process limitation "formed by CVD" doesn't carry the patentability weight, because this is product claims.

"Even though product -by- process claims are limited by and defined by the process, determination of patentability is based upon the product itself. The patentability of a product does not depend on its method of production. If the product in product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product is made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

A "product by process" claim is directed to the product *per se*, no matter how actually made, *In re Hirao and Sato et al.*, 190 USPQ 15 at 17 (CCPA 1976) (footnote 3). See also *In re Brown and Saffer*, 173 USPQ 685 (CCPA 1972); *In re Luck and Gainer*, 177 USPQ 523 (CCPA 1973); *In re Fessmann*, 180 USPQ 324 (CCPA 1974); and *In re Marosi et al.*, 218 USPQ 289 (CAFC 1983) final product *per se* which must be determined in a "product by, all of" claim, and not the patentability of the process, and that an old or obvious product, whether claimed in "product by process" claims or not. Note that Applicant has the burden of proof in such cases, as the above caselaw makes clear.

Allowable Subject Matter

Claims 5-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The prior art does not disclose wherein a length L1 of a bridges portion of the protective film are adjusted to suppress scattering and spouting at a void formed by the bridging of the protecting film (cl.5); wherein a length L1 of a bridges portion of the protective film are adjusted so that the minimum value S1 is not less than 1.8 um, and the length L1 is not more than 900 um, or the minimum value S1 of wire distance and /or the length L1 of the bridged portion are adjusted so that the minimum value S1 is within a range of from not less than 1.2 um to less than 1.8um , and the length L1 is not more than 1400um (cl.6); wherein the length L1 of the bridged portion is not more than 400 um (cl.7); and wherein the minimum value S1 and/or the length L1 are adjusted in a region other than the region overlapping with the bonding pad (cl.8).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yennhu B. Huynh whose telephone number is 571-272-1692. The examiner can normally be reached on M-F 8.30AM-7.00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached 571-272-1702. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

Application/Control Number: 10/705,306
Art Unit: 2813

Page 8

308-7722 for regular communications and 703-308-7724 for After Final
communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is 703-308-
0956.

YNBH,

122004

Carl Whitehead
CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800